

What is claimed is:

1. A pedal powered flywheel power unit comprising:

- a) a power unit frame;
- b) a flywheel assembly including:
  - i) a flywheel axle,
  - ii) at least two mounting bearings that secure the flywheel axle to the power unit frame and allow the flywheel axle to rotate freely along its axis,
  - iii) at least one flywheel attached to the flywheel axle, and
  - iv) a flywheel gear set with at least one gear attached to the flywheel axle;
- c) a transfer axle assembly including:
  - i) a transfer axle,
  - ii) at least two mounting bearings that secure the transfer axle to the power unit frame and allow the transfer axle to rotate freely along its axis,
  - iii) a first transfer gear set with at least one gear attached to one end of the transfer axle, and
  - iv) a second transfer gear set with at least one gear attached to the other end of the transfer axle;
- d) a pedal assembly including:
  - i) a pedal axle,
  - ii) at least one pair of mounting bearings that secures the pedal axle to the power unit frame and allow the pedal axle to rotate freely along its axis,
  - iii) two pedals attached to either end of the pedal axle such that a human using the pedals will create rotational force along the pedal axle, and
  - iv) a pedal gear set with at least one gear attached to the pedal axle;
- e) a first chain operatively connecting the pedal gear set to the first transfer gear set;

f) a second chain operatively connecting the second transfer gear set to the flywheel gear set; and

g) a first transmission assembly including:

i) a transmission transfer gear attached to the flywheel axle,

ii) a transmission with multiple gears in a gearing ratio of 10:1 to .8:1,

iii) a transmission input gear attached to the transmission and operatively associated with the transmission transfer gear in approximately a 1:1 gearing ratio,

iv) a transmission output gear attached to the transmission that provides power output from the flywheel only when a clutch within the transmission is engaged.

2. The pedal powered flywheel power unit of claim 1 further comprising a third transfer gear set with at least one gear attached to the transfer axle and a second pedal assembly including:

i) a second pedal axle,

ii) at least one pair of mounting bearings that secures the second pedal axle to the power unit frame and allow the second pedal axle to rotate freely along its axis,

iii) two pedals attached to either end of the second pedal axle such that a human using the pedals will create rotational force along the second pedal axle,

iv) a second pedal gear set with at least one gear attached to the second pedal axle, and

v) a third chain operatively connecting the second pedal gear set to the third transfer gear set.

3. The pedal powered flywheel power unit of claim 1 further comprising a rod that inserts into the flywheel axle and can connect to a flywheel axle of a second pedal powered flywheel power unit of claim 1 such that the two pedal powered flywheel power units operate in unison.

- 1     4. The pedal powered flywheel power unit of claim 1 further comprising a rod that inserts  
2       into the transfer axle and can connect to a transfer axle of a second pedal powered  
3       flywheel power unit of claim 1 such that the two pedal powered flywheel power unit  
4       operate in unison.
- 1     5. The pedal powered flywheel power unit of claim 1 further comprising support  
2       members located on the power unit frame for connecting to a wheeled vehicle support  
3       frame.
- 1     6. The pedal powered flywheel power unit of claim 5 further comprising a wheeled  
2       vehicle support frame that supports two axles with two wheels each wherein one set of  
3       the wheels and axles is operatively connected to a steering mechanism and one axle is  
4       operative connected to the transmission output gear.
- 1     7. The pedal powered flywheel power unit of claim 1 further comprising a third gear set  
2       on the transfer axles that can be connected by a chain to a second pedal powered  
3       flywheel power unit of claim 1 such that the two pedal powered flywheel power units  
4       operate in unison.

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